

us reason to reduce his conviction. See *Commonwealth v. Chukwuezi*, 475 Mass. 597, 610, 59 N.E.3d 380 (2016), citing *Roper v. Simmons*, 543 U.S. 551, 574, 125 S.Ct. 1183, 161 L.Ed.2d 1 (2005) (age of eighteen “is the point where society draws the line for many purposes between childhood and adulthood”); *Brown*, 466 Mass. at 684–685, 1 N.E.3d 259 (Legislature’s “comprehensive sentencing scheme . . . remains valid as applied to adults”). Thus, we decline to exercise our § 33E power based on the comparative ages of the defendants.

We have considered the defendants’ other arguments and find them without merit. Therefore, we decline to exercise our power under § 33E to reduce the defendants’ verdicts or grant them a new trial.

Conclusion. For the reasons stated above, we affirm the defendants’ convictions. However, we remand Laporte’s convictions of home invasion and armed robbery while masked for resentencing in accordance with *Perez*, *supra*.

So ordered.



477 Mass. 775

COMMONWEALTH

v.

Thomas J. GERHARDT.

SJC-11967

Supreme Judicial Court of Massachusetts,
Worcester.

Argued January 6, 2017

Decided September 19, 2017

Background: Defendant was charged with operation of motor vehicle while under influence of marijuana. He filed motion

for *Daubert-Lanigan* hearing seeking to challenge the admissibility of evidence concerning his performance on field sobriety tests (FSTs) conducted after the stop. Following hearing, the District Court Department, Worcester Division, Andrew M. D’Angelo, J., reported questions of law to the Appeals Court. The Supreme Judicial Court granted defendant’s application for direct appellate review.

Holdings: The Supreme Judicial Court, Gaziano, J., held that:

- (1) lack of consensus in scientific community as to whether FSTs used to measure alcohol impairment also measure impairment from marijuana use did not necessitate exclusion of results of such tests;
- (2) lay officer testifying to defendant’s performance on FSTs that measured balance and coordination did not have to be qualified as expert;
- (3) lay officer could not offer opinion as to defendant’s sobriety or intoxication; and
- (4) jurors could use their common sense in evaluating whether defendant was impaired due to marijuana use.

Report questions answered.

1. Criminal Law ⇌457

Because the effects of marijuana may vary greatly from one individual to another, and those effects are as yet not commonly known, neither a police officer nor a lay witness who has not been qualified as an expert may offer an opinion as to whether a driver was under the influence of marijuana. Mass. Gen. Laws Ann. ch. 90, § 24.

2. Automobiles ⇌422.1

In a prosecution for operating a motor vehicle while under the influence of alcohol, introduction of the results of the hori-

zontal gaze nystagmus (HGN) test at trial as evidence of impairment requires expert testimony.

3. Automobiles $\S$ 353(6)

In a prosecution for operating while under the influence of marijuana, it is the Commonwealth's burden to prove beyond a reasonable doubt, in addition to the other elements of the offense, that a defendant's consumption of marijuana impaired his or her ability to drive a motor vehicle safely. Mass. Gen. Laws Ann. ch. 90, $\S$ 24.

4. Automobiles $\S$ 411

Lack of consensus in scientific community as to whether standard field sobriety tests (FSTs) used to measure alcohol impairment also measure impairment from marijuana use did not necessitate exclusion of results of such tests, in trial for operating under influence of marijuana; results of certain FSTs that tested defendant's balance and coordination still provided relevant information related to defendant's impairment, and police officer's testimony regarding defendant's performance on FSTs was probative of defendant's balance, coordination, ability to retain and follow directions, and ability to perform tasks requiring divided attention, and presence or absence of other skills necessary for safe operation of motor vehicle. Mass. Gen. Laws Ann. ch. 90, $\S$ 24.

5. Criminal Law $\S$ 338(1)

The relevance threshold for the admission of evidence is low: evidence is relevant if it has a rational tendency to prove an issue in the case or to render a desired inference more probable than it would be otherwise.

6. Criminal Law $\S$ 338(1)

To be relevant, evidence need not establish directly the proposition sought; it must only provide a link in the chain of proof.

7. Automobiles $\S$ 422.1, 423

There must be a determination as to the qualification of the individual administering the horizontal gaze nystagmus (HGN) test during a traffic stop and the appropriate procedure to be followed, if the HGN test results, as evidence of impairment, are to be admitted at trial.

8. Automobiles $\S$ 422.1

Evidence that marijuana can cause impairment of skills necessary to driving, such as coordination, concentration, and the ability to divide one's attention among multiple tasks is within the common experience and knowledge of jurors, and therefore, a police officer testifying to a defendant's performance on the field sobriety tests (FSTs) that measure these skills need not be qualified as an expert, and such evidence may be admitted without satisfying the requirements for scientific evidence, in a trial for operating while under the influence of marijuana; however, a police officer may not suggest on direct examination that an individual's performance on an FST established that the individual was under the influence of marijuana, or that a defendant "passed" or "failed" any FST, as this language improperly implies that the FST is a definitive test of marijuana use or impairment. Mass. Gen. Laws Ann. ch. 90, $\S$ 24.

9. Automobiles $\S$ 422.1

The walk-and-turn, one-leg-stand, and other field sobriety tests (FSTs) do not directly test marijuana impairment, but are a means of evaluating a defendant's balance, coordination, and other skills specific to that test, and, a witness testifying to the performance of FSTs in the context of marijuana intoxication should refer to a driver's performance on roadside assessments so as not to suggest that they function as scientific validation of a defendant's sobriety or intoxication.

10. Automobiles ⇨355(6)

The fact that field sobriety tests (FSTs) cannot be treated as scientific tests of marijuana impairment means that evidence of performance on FSTs, alone, is not sufficient to support a finding that a defendant's ability to drive safely was impaired due to the consumption of marijuana, and the jury must be so instructed. Mass. Gen. Laws Ann. ch. 90, § 24.

11. Criminal Law ⇨457

In the alcohol context, a lay officer may offer his opinion regarding a defendant's level of sobriety or intoxication, in a prosecution for operating while under the influence, but may not opine whether a defendant operated a motor vehicle while under the influence of alcohol or whether the defendant's consumption of alcohol diminished his ability to operate a motor vehicle safely.

12. Criminal Law ⇨457

In a prosecution for operating a motor vehicle while under the influence of alcohol, a police officer's lay opinion testimony regarding a defendant's level of sobriety or intoxication is proper because it is not based on scientific, technical, or other specialized knowledge that would require expert testimony, but, rather, lies within the realm of common experience.

13. Criminal Law ⇨457, 465

Where there is no scientific consensus on what, if any, physical characteristics indicate marijuana intoxication, no lay opinion can be admissible as common knowledge or understanding on that subject, in a trial for operating a motor vehicle while under the influence of marijuana; a lay witness may testify concerning a defendant's observable appearance, behavior, and demeanor, but may not offer an opin-

ion as to the defendant's sobriety or intoxication.

14. Criminal Law ⇨731

Jurors are the ultimate arbiters of the facts.

15. Criminal Law ⇨857(1)

Jurors may use their common sense in evaluating whether the Commonwealth introduced sufficient evidence to satisfy its burden of proof.

Marijuana. Motor Vehicle, Operating under the influence. Evidence, Field sobriety test.

COMPLAINT received and sworn to in the Worcester Division of the District Court Department on April 24, 2013.

A motion for a hearing to challenge the admissibility of certain evidence was heard by Andrew M. D'Angelo, J., and questions of law were reported by him to the Appeals Court.

The Supreme Judicial Court granted an application for direct appellate review.

Rebecca A. Jacobstein, Committee for Public Counsel Services, for the defendant.

Michelle R. King, Assistant District Attorney, for the Commonwealth.

Steven S. Epstein & Marvin Cable, Northampton, for National Organization for the Reform of Marijuana Laws, amicus curiae, submitted a brief.

Michael A. Delsignore, Stoughton, & Julie Gaudreau, for National College for DUI Defense, amicus curiae, submitted a brief.

Present: Gants, C.J., Lenk, Hines, Gaziano, Lowy, & Budd, JJ.¹

1. Justice Hines participated in the delibera-

tion on this case prior to her retirement.

GAZIANO, J.

¹⁷⁷In this case we are asked to consider the admissibility of field sobriety tests (FSTs) where a police officer suspects that a driver has been operating while under the influence of marijuana. Police typically administer three FSTs—the “horizontal gaze nystagmus test,” the “walk and turn test” and the “one leg stand test”—during a motor vehicle stop in order to assess motorists suspected of operating while under the influence of alcohol or other drugs. These tests were developed specifically to measure alcohol consumption, and there is widespread scientific agreement on the existence of a strong correlation between unsatisfactory performance and a blood alcohol level of at least .08%.

By contrast, in considering whether a driver is operating while under the influence of marijuana, there is as yet no scientific agreement on whether, and, if so, to what extent, these types of tests are indicative of marijuana intoxication. The research on the efficacy of FSTs to measure marijuana impairment has produced highly disparate results. Some studies have shown no correlation between inadequate performance on FSTs and the consumption of marijuana; other studies have shown some correlation with certain FSTs, but not with others; and yet other studies have shown a correlation with all of the most frequently used FSTs. In addition, other research indicates that less frequently used FSTs in the context of alcohol consumption may be better measures of marijuana intoxication.

[1] The lack of scientific consensus regarding the use of standard FSTs in attempting to evaluate marijuana intoxication does not mean, however, that FSTs have no probative value beyond alcohol

intoxication. We conclude that, to the extent that they are relevant to establish a driver’s balance, coordination, mental acuity, and other skills required to safely operate a motor vehicle, FSTs are admissible at trial as observations of the police officer conducting the assessment. The introduction in evidence of the officer’s observations of what will be described as “road-side assessments” shall be without any statement as to whether the driver’s performance would have been deemed a “pass” or a “fail,” or whether the performance indicated impairment. Because the effects of marijuana may vary greatly from one individual⁷⁷⁷ to another, and those effects are as yet not commonly known, neither a police officer nor a lay witness who has not been qualified as an expert may offer an opinion as to whether a driver was under the influence of marijuana.²

1. Background. a. Prior proceedings. Following a motor vehicle stop, Thomas Gerhardt was charged in the District Court with operating a motor vehicle while under the influence of marijuana, in violation of G.L.c. 90, § 24. Gerhardt filed a motion for a Daubert-Lanigan hearing, seeking to challenge the admissibility of evidence concerning his performance on FSTs conducted after the stop. See Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 592-595, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993); Commonwealth v. Lanigan, 419 Mass. 15, 24-27, 641 N.E.2d 1342 (1994). After an evidentiary hearing, a District Court judge reported four questions to the Appeals Court, pursuant to Mass. R. Crim. P. 34, as amended, 442 Mass. 1501 (2004).

“1. Whether police officers may testify to the administration and results of standard [FSTs] in prosecutions for [o]perating [u]nder the [i]nfluence of [m]arijuana

2. We acknowledge the amicus briefs in support of the defendant submitted by the National College for DUI Defense and the

National Organization for the Reform of Marijuana Laws.

as they do in [o]perating [u]nder the [i]nfluence of [a]lcohol prosecutions?

“2. Are the effects of marijuana consumption sufficiently within the common knowledge and experience of a lay person, such that a non-expert witness may offer opinion evidence whether a person is ‘high’ on marijuana?”

“3. May a police officer, who has not been qualified as an expert witness, testify to the effects of marijuana on a person such as bloodshot eyes, lack of coordination and/or balance, reaction times, slow speech, paranoia, or relaxed responses[?]”

“4. May a juror rely on their own experience and common sense about the effects of marijuana as they may do in an [o]perating [u]nder the [i]nfluence of [a]lcohol prosecution?” [Footnote omitted].

We granted Gerhardt’s application for direct appellate review. After oral argument, we remanded the matter to the District Court judge who had reported the questions for further findings on eleven specific issues. Following the return of the judge’s findings, we again heard oral argument in the matter.

177^b. Facts. The parties submitted a statement of agreed facts as to the evidence that the Commonwealth would seek to present at trial. On February 13, 2013, at approximately 12:20 A.M., Trooper French of the State police³ observed a blue Suzuki Grand Vitara motor vehicle traveling south on Route 146, without the rear lights on. French followed the vehicle as it left Route 146 at exit 8. He activated

his emergency lights and stopped the vehicle on Elmwood Street in Millbury.

French approached the vehicle on the passenger side. There were three occupants in the vehicle: the driver, later learned to be Gerhardt, and two passengers. French saw smoke inside the vehicle, and, as soon as the front passenger window was lowered, he detected “the distinct odor of burnt marijuana.” He also saw a large amount of what he identified as cigar tobacco on the floor, and a cigar slicer on the key ring in the ignition. The trooper asked the driver for his driver’s license and registration. Gerhardt handed him the license and said that he did not have his registration.

French asked Gerhardt how much marijuana was in the vehicle. Gerhardt responded that there were “a couple of roaches” in the ashtray; he pulled two largely-consumed rolled cigarettes from the ashtray and handed them to French. French then asked when the occupants had smoked marijuana. One of the passengers responded that they had smoked about twenty minutes previously. Gerhardt said that it had been about three hours earlier. French walked to the driver’s side of the vehicle and noticed that the light switch was in the “off” position. He asked Gerhardt how much he had smoked. Gerhardt responded that he had smoked approximately one gram of marijuana.

[2] French then asked Gerhardt to step out of the vehicle to perform FSTs. French administered a number of FSTs, including the horizontal gaze nystagmus test (HGN);⁴ the nine-step walk-and-

3. Trooper French’s first name is not apparent in the record.

4. “Nystagmus is ‘[a]n abnormal and involuntary movement of the eyeballs from side to side or up and down, but usually from side to side.’” Commonwealth v. Sands, 424 Mass.

184, 186, 675 N.E.2d 370 (1997), quoting State v. Merritt, 36 Conn.App. 76, 84, 647 A.2d 1021 (1994). An officer administers the HGN test by having the subject focus on a moving object and observing whether the subject is able to follow the object smoothly with his or her eyes, whether the subject’s eyes

turn⁷⁷⁹ test (WAT); and the one-leg-stand test (OLS). French also asked Gerhardt to recite the alphabet from D to Q and to count backward from seventy-five to sixty-two.

Gerhardt had no nystagmus indicators, and was able to recite the requested portion of the alphabet and to count backwards. He did not perform the WAT as instructed, even after several explanations and a demonstration by the trooper in response to Gerhardt's first answer in the negative when asked whether he understood the instructions. Rather than standing heel to toe, with his right foot in front and his left toes touching his heel, as he had been shown, Gerhardt moved his feet so that they were side by side; he also did not turn around as instructed. French determined that "the results of this test indicated that Gerhardt was impaired." The trooper then provided instructions and gave a demonstration of the OLS test, and Gerhard indicated that he understood. In performing the test, however, Gerhard did not remain upright on one foot, instead putting his foot down multiple times, and swayed. French determined that "the results of this test indicated that Gerhardt was impaired."

After administering these tests, French concluded that Gerhardt was under the influence of marijuana. French informed Gerhardt that he was not under arrest, but had him sit in the back of French's cruiser. Both passengers were asked to step out of the vehicle and were pat frisked. They, too, were told that they were not under arrest, and were placed in the back seat of the cruiser. A second trooper arrived at the

scene. During a search of the vehicle, the troopers recovered two more marijuana "roaches" and a marijuana stem.

On April 24, 2013, a criminal complaint issued against Gerhardt charging him with operating a motor vehicle while under the influence of drugs, pursuant to G.L.c. 90, § 24 (1) (a) (1), and traffic violations.

2. Discussion. a. Field sobriety tests. The FSTs, which were designed to detect alcohol impairment, are administered and evaluated in a standardized manner. The two tests primarily administered in the context of alcohol impairment are the WAT and the OLS, which are designed to assess an individual's balance, coordination, dexterity, ability to follow directions, and ability to focus attention on multiple subjects at the same time.⁵

¹⁷⁸⁰In performing the WAT, the subject is directed to take nine steps, walking heel-to-toe, along a real or imaginary straight line. The subject then turns on one foot and returns in the same manner. An officer administering the WAT looks for eight specific indicators of impairment: losing balance while listening to the instructions, beginning before the instructions are finished, stopping to regain balance while walking, failing to walk heel-to-toe, stepping off the line, using arms to balance, making an improper turn, or taking an incorrect number of steps. Where the consumption of alcohol is at issue, there is an established correlation between performance on the test and blood alcohol content (BAC), with some research indicating that as many as seventy-nine per cent

bounce at the extremes of the field of vision, and whether they exhibit nystagmus, where there is an angle of less than forty-five degrees between the eyes and the object. *Sands*, *supra* at 186-187, 675 N.E.2d 370. Introduction of the results of this test at trial requires expert testimony. See *id.* at 188, 675 N.E.2d 370.

5. There are a number of other FSTs, such as the "Romberg balance test," in which the subject stands with heels and toes together and arms at the side of the body and tips his or her head back slightly and estimates the passage of thirty seconds, and the "finger to nose test," which are less frequently used in the context of alcohol impairment.

of individuals who exhibit two or more of these indicators have a BAC of 0.08 per cent or higher.

In performing the OLS, the subject stands with one foot raised approximately six inches off the ground while counting aloud for thirty seconds. An officer conducting the test looks for four indicators of impairment: swaying while balancing, using arms to balance, hopping to maintain balance, and putting the foot down. Research has indicated that as many as eighty-three per cent of individuals who exhibit two or more of these indicators have a BAC of 0.08 per cent or higher.

[3,4] b. Admissibility of the FSTs in the context of marijuana. While using marijuana is no longer a crime in Massachusetts for adults who are at least twenty-one years old,⁶ operating a motor vehicle while under the influence of marijuana remains a criminal offense. See G.L.c. 90, § 24. In a prosecution for operating while under the influence of marijuana, it is the Commonwealth's burden to prove beyond a reasonable doubt, in addition to the other elements of the offense, that a defendant's consumption of marijuana impaired his or her ability to drive a motor vehicle safely. See *Commonwealth v. Daniel*, 464 Mass. 746, 756, 985 N.E.2d 843 (2013), quoting *Commonwealth v. Connolly*, 394 Mass. 169, 173, 474 N.E.2d 1106 (1985) (in prosecution for operating while under influence of alcohol or marijuana, the Commonwealth

"need not prove that the defendant actually drove in an unsafe or erratic manner, . . . [but] it must prove a diminished capacity to operate safely").

Unlike alcohol, marijuana does not act as a general central nervous system depressant, impairing functions throughout the body. Nonetheless, the primary psychoactive substance in marijuana, tetrahydrocannabinol (THC), is known to have an impact on several functions of the brain that are relevant to driving ability, including the capacity to divide one's attention and focus on several things at the same time, balance, and the speed of processing information. While not all researchers agree, a significant amount of research has shown that consumption of marijuana can impair the ability to drive. There is ongoing disagreement among scientists, however, as to whether the FSTs are indicative of marijuana impairment. In recent years, numerous studies have been conducted in an effort to determine whether a person's performance on the FSTs is a reliable indicator of impairment by marijuana.⁷ These studies have produced mixed results.⁸ For example, researchers found that the FSTs were mildly sensitive to the effects of marijuana, with the OLS being the most sensitive. That study, however, also indicated that the OLS produced numerous false positives.⁹ Other researchers found that the OLS was a somewhat more reliable indicator of marijuana impairment than the WAT.¹⁰ In a more recent study,

6. See St 2016, c. 334, "The Regulation and Taxation of Marijuana Act."

7. The judge noted several of these studies in his findings on remand from this court. In addition, both parties provided numerous such studies in the record, and one of the amici did as well.

8. The number of studies in this field is vast; we cite only a few representative examples.

9. Bosker, Theunissen, Conen, Kuypers, Jelfery, Walls, Kauert, Toennes, Moeller, & Ramaekers, A Placebo-Controlled Study to Assess Standardized Field Sobriety Tests Performance During Alcohol and Cannabis Intoxication in Heavy Cannabis Users and Accuracy of Point of Collection Devices for Detecting THC in Oral Fluid, 223 *Psychopharmacology* 439, 443-444 (2012) (Bosker).

10. Papafotiou, Carter, & Stough, An Evaluation of the Sensitivity of the Standardized

by contrast, a different group of researchers found that the WAT was a better indicator of marijuana impairment than the OLS.¹¹ Researchers conducting another study found that marijuana significantly impaired performance on the HGN, the WAT, and the OLS.¹² Other studies have shown no correlation between performance on the HGN and consumption of marijuana, even where the OLS or WAT showed some sensitivity to marijuana consumption,¹³ while others have found no correlation between the consumption of marijuana and any of these FSTs.¹⁴

As a result of these varied results, some researchers have suggested development of another group of FSTs, combining the currently less-frequently used Romberg stand test and the nose-touch test, see note 5, *supra*, with a to-be-developed test on pupil constriction,¹⁵ or adding a scoring factor of head movements or jerks to the standard FSTs.¹⁶ Other researchers are working on a tongue or cheek swab test that directly measures levels of THC shortly after consumption.¹⁷ It is clear from the above, as the judge stated in his findings on remand, that the scientific community has yet to reach a consensus on the reliability of FSTs to assess whether a driver is under the influence of marijuana.

Field Sobriety Tests (SFSTs) to Detect Impairment Due to Marijuana Intoxication, 180 *Psychopharmacology* 107, 113 (2005) (Papafotiou).

11. Declues, Perez, & Figueroa, A 2-Year Study of Delta-9-tetrahydrocannabinol Concentrations in Drivers: Examining Driving and Field Sobriety Test Performance, 61 *J. Forensic Sci.* 1664, 1669 (2016).

12. Papafotiou, *supra* at 111-113.

13. Hartman, Richman, Hayes, & Heustis, Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment, 92

[5, 6] The lack of scientific agreement, however, does not, by itself, resolve the question whether a driver's performance on an FST is relevant evidence in a trial on a charge of operating while under the influence of marijuana. "The relevance threshold for the admission of evidence is low. 'Evidence is relevant if it has a "rational tendency to prove an issue in the case,"'" *Commonwealth v. Arroyo*, 442 Mass. 135, 144, 810 N.E.2d 1201 (2004), quoting *Commonwealth v. LaCorte*, 373 Mass. 700, 702, 369 N.E.2d 1006 (1977), or to "render a 'desired inference more probable than it would be [otherwise],' " *Arroyo*, *supra*, quoting *Commonwealth v. Fayerweather*, 406 Mass. 78, 83, 546 N.E.2d 345 (1989). To be relevant, evidence "need not establish directly the proposition sought; it must only provide a link in the chain of proof." *Commonwealth v. Sicari*, 434 Mass. 732, 750, 752 N.E.2d 684 (2001), cert. denied, 534 U.S. 1142, 122 S.Ct. 1096, 151 L.Ed.2d 993 (2002), quoting *Commonwealth v. Yesilciman*, 406 Mass. 736, 744, 550 N.E.2d 378 (1990).

The absence of scientific consensus regarding the use of standard FSTs in attempting to evaluate marijuana intoxication does not mean that they have no probative value. A police officer makes numerous relevant observations in the course of an encounter⁷⁸³ with a possibly impaired

Accident Analysis and Prevention 219, 226 (2016) (Hartman).

14. See generally Neavyn, Blohm, Babu, & Bird, Medical Marijuana and Driving: A Review, 10 *J. Med. Toxicol.* 269 (2014); Jones, Donnelly, Swift, & Weatherburn, Driving Under the Influence of Cannabis: The Problem and Potential Countermeasures, 87 *Crime & Justice Bulletin* 1 (2005).

15. See Hartman, *supra* at 226.

16. See Papafotiou, *supra* at 108.

17. See Bosker, *supra* at 442, 445.

driver. There is no doubt that an officer may testify to his or her observations of, for example, any erratic driving or moving violations that led to the initial stop; the driver's appearance and demeanor; the odor of fresh or burnt marijuana; and the driver's behavior on getting out of the vehicle.

[7] In our view, certain of the FSTs also may provide information that is relevant to the question of a defendant's impairment, and a police officer may testify, as a lay witness, to his or her observations of the defendant's performance. In particular, observations of the performance of the OLS and the WAT may be admissible as evidence of a defendant's balance, coordination, ability to retain and follow directions, and ability to perform tasks requiring divided attention, and the presence or absence of other skills necessary for the safe operation of a motor vehicle.¹⁸ We see no reason why an officer's observations of a defendant's behavior on being asked to walk a straight line or to stand on one foot should be excluded because the scientific community's understanding of precisely how this correlates with marijuana use is still evolving. We are not persuaded, however, that the FSTs can be treated as scientific tests establishing impairment as a result of marijuana consumption. The scientific community has not reached a consensus as to whether a defendant's performance on any combination of FSTs, or

on any individual FST, is correlated with marijuana use or impairment.

[8] The unsettled state of the scientific research suggests that FST evidence should be neither treated as a definitive test of impairment nor excluded entirely from consideration by the finder of fact. Cf. Commonwealth v. Thomas, 476 Mass. 451, 464, 68 N.E.3d 1161 (2017) (where there is no consensus that simultaneous display of photographs is inferior to sequential display, "the decision . . . is best left to law enforcement, and the choice will continue to bear on the weight of the identification, but not on its admissibility").¹⁷ Moreover, that marijuana can cause impairment of skills necessary to driving, such as coordination, concentration, and the ability to divide one's attention among multiple tasks is within the common experience and knowledge of jurors. A police officer testifying to a defendant's performance on these FSTs therefore need not be qualified as an expert, and such evidence may be admitted without satisfying the Daubert-Lanigan requirements. A police officer may not suggest, however, on direct examination that an individual's performance on an FST established that the individual was under the influence of marijuana.¹⁹ Likewise, an officer may not testify that a defendant "passed" or "failed" any FST, as this language improperly implies

18. The HGN stands on a different footing from the FSTs that are directed to balance and coordination. We previously have held that, in a prosecution for operating while under the influence of alcohol, "the HGN test relies on an underlying scientific proposition and therefore expert testimony is required." See Sands, 424 Mass. at 188, 675 N.E.2d 370. In addition, "there must be a determination as to the qualification of the individual administering the HGN test and the appropriate procedure to be followed if the HGN test results are to be admitted at trial." Id. We

reached this result because the correlation between alcohol intoxication and nystagmus is not within the common experience of jurors. Id. In the context of marijuana, any correlation between nystagmus and intoxication is even further beyond jurors' common knowledge and experience.

19. Here, for example, a trooper testified at the motion hearing that "the results of the [WAT and OLS] indicated that Gerhardt was impaired." This testimony would not be admissible at trial.

that the FST is a definitive test of marijuana use or impairment.²⁰

[9] Indeed, the word “test” itself inadvertently may lend “an aura of scientific validity.” See *United States v. Horn*, 185 F.Supp.2d 530, 559 (D. Md. 2002). We recognize, nonetheless, that it is not practicable to eliminate the concept of testing entirely from trial testimony. The FSTs are used as means to evaluate a defendant’s ability to perform discrete tasks that are correlated to skills required to safely drive a vehicle. See Webster’s New Universal Unabridged Dictionary 1951 (2003) (defining “test” as, *inter alia*, “a set of questions, problems, or the like, used as a means of evaluating the abilities, aptitudes, skills, or performance of an individual or group; examination,” and “a set of standardized questions, problems, or tasks designed to elicit responses for use in measuring the traits, capacities, or achievements of an individual”). An officer administering the WAT, for example, assesses a defendant’s ability to take nine steps, walk heel-to-toe on a straight line, turn around, and return in the same manner. In some sense, the officer thereby “tests” (measures, examines, evaluates, assesses, or, at a minimum, observes) the driver’s physical balance and coordination, as well as his or her mental ability to ⁷⁸⁵understand and follow directions and to perform divided-attention tasks, albeit not in the same way that a chemist in a laboratory tests a sample for the presence of a particular substance. In all circumstances, however, it must be made clear to the fact finder that the

WAT, the OLS, and the other FSTs do not directly test marijuana impairment. The FSTs are a means of evaluating a defendant’s balance, coordination, and other skills specific to that test. In addition, a witness testifying to the performance of FSTs in the context of marijuana intoxication should refer to a driver’s performance on “roadside assessments,” so as not to suggest that they function as scientific validation of a defendant’s sobriety or intoxication.

[10] We emphasize as well another consequence of the lack of consensus regarding the FSTs: the fact that the FSTs cannot be treated as scientific “tests” of impairment means that evidence of performance on FSTs, alone, is not sufficient to support a finding that a defendant’s ability to drive safely was impaired due to the consumption of marijuana, and the jury must be so instructed.²¹

c. Lay testimony on the effects of marijuana. We also are asked whether a police officer may testify, without being qualified as an expert, to the effects of marijuana consumption and may offer an opinion that a defendant was intoxicated by marijuana. We conclude that an officer may not do so.

[11, 12] “A lay opinion . . . is admissible only where it is ‘(a) rationally based on the perception of the witness; (b) helpful to a clear understanding of the witness’s testimony or the determination of a fact in issue; and (c) not based on scientific, technical, or other specialized knowledge.’” *Commonwealth v. Canty*, 466 Mass. 535,

20. On cross-examination, defense counsel may challenge a police officer’s testimony concerning a defendant’s performance of an FST or any portion of an FST. See S.L. Jones, *Drunk Driving Defense*, §§ 3.33-3.48 (2016-2017 ed.). See also *id.* at §§ 3.49-3.54. We do not bar defense counsel from eliciting from the officer his or her subjective evaluation of the defendant’s performance, but we stress

that defense counsel makes this strategic decision at his or her own peril, and opens the door to redirect examination by the Commonwealth on the same topic.

21. A model jury instruction regarding FSTs, to be used in prosecutions for operating while under the influence of marijuana, is set forth in the Appendix.

541, 998 N.E.2d 322 (2013), quoting Mass. G. Evid. § 701 (2013). In the alcohol context, “a lay [officer] . . . may offer his opinion regarding a defendant’s level of sobriety or intoxication but may not opine whether a defendant operated a motor vehicle while under the influence of alcohol or whether the defendant’s consumption of alcohol diminished his ability to operate a motor vehicle safely.” *Canty*, *supra* at 544, 998 N.E.2d 322, citing *Commonwealth v. Jones*, 464 Mass. 16, 17 n.1, 979 N.E.2d 1088 (2012). Such lay opinion testimony is proper because it is not based on scientific, technical, or other specialized knowledge that would require expert testimony, but, rather, lies within the realm of common experience. We long have ¹⁷⁸⁶observed that “[t]he ‘effects of liquor upon the minds and actions of men are well known to everybody.’” *Commonwealth v. Wall*, 469 Mass. 652, 671, 15 N.E.3d 708 (2014), quoting *Commonwealth v. Taylor*, 263 Mass. 356, 362, 161 N.E. 245 (1928). See *Canty*, *supra* at 542, 998 N.E.2d 322, quoting *Holton v. Boston Elevated Ry. Co.*, 303 Mass. 242, 246, 21 N.E.2d 251 (1939) (“the principal objective symptoms [of alcohol intoxication] are so well known’ that we consider the lay opinion to have probative value”).

No such general knowledge exists, however, as to the physical or mental effects of marijuana consumption, which vary greatly amongst individuals. On remand, the District Court judge reported in his findings of fact, based on expert testimony presented by both sides and numerous scientific studies, as well as existing case law in Massachusetts, that “[n]o studies have concluded that any specific characteristics are routinely found in people who have used

marijuana and were impaired. Manifestations of impairment may differ between subjects who are under the influence of liquor and those who are under the influence of marijuana, depressants, or stimulant substances. The judge found further that some scientific studies had identified “four prevalent physical characteristics common among those who were determined to be cannabis-positive drivers . . . These physical characteristics are red and/or bloodshot eyes, a lack of convergence, eyelid tremors, and drowsiness.” He determined, however, that no testimony admitted at the *Daubert-Lanigan* hearing related these physical characteristics “to an inference of impaired driving by reason of marijuana use. Further, no scientific studies validating these specific physical characteristics as symptomatic of impaired driving by reason of marijuana use were entered into evidence.” Our review of the record confirms that the judge’s findings regarding lay opinion evidence are supported by the documentary evidence and in the studies submitted to us.

[13] Where there is no scientific consensus on what, if any, physical characteristics indicate marijuana intoxication, no lay opinion can be admissible as common knowledge or understanding on that subject. A lay witness may testify concerning a defendant’s observable appearance, behavior, and demeanor, but may not offer an opinion as to the defendant’s sobriety or intoxication.²² See *State v. Schories*, 827 N.W.2d 659, 666 (Iowa 2013) (expert ¹⁷⁸⁷testimony preferred on cause of intoxication for substances other than alcohol); *State v. Nobach*, 309 Mont. 342, 346, 46

22. We caution the Commonwealth that “a prosecutor who elicits from a police officer his or her special training or expertise in ascertaining whether a person is intoxicated risks transforming the police officer from a lay witness to an expert witness on this issue,

and the admissibility of any opinion proffered on this issue may then be subject to the different standard applied to expert witnesses.” See *Commonwealth v. Canty*, 466 Mass. 535, 541 n.5, 998 N.E.2d 322 (2013).

P.3d 618 (2002) (“we are not persuaded that lay people are sufficiently knowledgeable about common symptoms of drug consumption . . . to offer lay opinion testimony”); State v. Bealor, 187 N.J. 574, 587, 902 A.2d 226 (2006) (court declined “to place lay opinion testimony regarding marijuana intoxication on the same footing as lay opinion testimony as to alcohol intoxication”). See also Commonwealth v. Sliech-Brodeur, 457 Mass. 300, 330 & n.43, 930 N.E.2d 91 (2010) (lay witness may not testify that individual suffers from mental illness, but may testify to observed behavior).

[14, 15] With respect to the question of jurors’ use of their own common sense, we recognize that jurors are the ultimate arbiters of the facts. See Commonwealth v. Lykus, 367 Mass. 191, 197, 327 N.E.2d 671 (1975). As a general rule, trial judges routinely instruct jurors, and jurors are urged by counsel, “not [to] leave their common sense outside the jury room.” See Commonwealth v. Mutina, 366 Mass. 810, 820, 323 N.E.2d 294 (1975). Jurors may use their common sense in evaluating whether the Commonwealth introduced sufficient evidence to satisfy its burden of proof. See Commonwealth v. Cole, 380 Mass. 30, 35-36, 402 N.E.2d 55 (1980) (in context of criminal responsibility, jurors may rely on facts and circumstances surrounding crime to determine whether Commonwealth established defendant’s sanity). We rely on the judge’s limiting instructions to inform jurors about the proper use of FST evidence. See Commonwealth v. Jackson, 384 Mass. 572, 579, 428 N.E.2d 289 (1981).

Conclusion. We answer the reported questions as follows:

1. “No.” Police officers may not testify to the administration and results of FSTs as they do in operating under the influence of alcohol prosecutions. Police officers may testify to the ad-

ministration of “roadside assessments” in the manner set forth in this opinion.

2. “No.” A lay witness may not offer an opinion that another person is “high” on marijuana.
3. “Yes.” A police officer may testify to observed physical characteristics of the driver such as blood shot eyes, drowsiness, and lack of coordination. The officer is not permitted to ¹⁷⁸⁸offer an opinion that these characteristics mean that the driver is under the influence of marijuana.
4. “Yes.” Jurors are permitted to utilize their common sense in assessing trial evidence.

The case is remanded to the District Court for further proceedings consistent with this opinion.

So ordered.

¹⁷⁸⁹Appendix.

Model Jury Instruction Regarding Roadside Assessments for Use in Prosecutions for Operating While Under the Influence of Marijuana

You heard testimony in this case that the defendant, at the request of a police officer, performed or attempted to perform various roadside assessments, such as [Here outline the nature of the evidence, e.g., walking a straight line, balancing on one foot]. These roadside assessments are not scientific tests of impairment by marijuana use. A person may have difficulty performing these tasks for many reasons unrelated to the consumption of marijuana.

It is for you to decide if the defendant’s performance on these roadside assessments indicates that his [her] ability to operate a motor vehicle safely was impaired. You may consider this evidence solely as it relates to the defendant’s balance, coordination, mental clarity, ability

Appendix.—Continued

to retain and follow directions, ability to perform tasks requiring divided attention, and other skills you may find are relevant to the safe operation of a motor vehicle.

It is for you to determine how much, if any, weight to give the roadside assessments. In making your determination, you may consider what the officer asked the defendant to do, the circumstances under which they were given and performed, and all of the other evidence in this case.

Finally, evidence of how a defendant performed in roadside assessments, standing alone, is never enough to convict a defendant of operating under the influence of marijuana.



477 Mass. 790

COMMONWEALTH

v.

Marc ALDANA.

SJC-12258

Supreme Judicial Court of Massachusetts,
Worcester.

Argued March 7, 2017

Decided September 19, 2017

Background: Following denial of motion to suppress by the Superior Court Department, Worcester, Daniel M. Wrenn, J., Defendant was convicted following jury-waived trial, Richard T. Tucker, J., of two counts of possession of ingredients to make incendiary device or substance with intent to do so. Defendant appealed.

Holdings: On transfer from the Appeals Court, the Supreme Judicial Court, Lenk, J., held that:

- (1) evidence was insufficient to support convictions, and
- (2) whether evidence would have supported uncharged crime of manufacturing of fireworks in building without license was not relevant to whether evidence supported conviction on charged offense.

Vacated; remanded.

1. Explosives ⇐4

To convict on a charge for possession of the ingredients to make an incendiary device or substance with the intent to do so, the Commonwealth is required to prove beyond a reasonable doubt that the defendant had in his possession or control, without lawful authority to do so, a substance which, alone or in combination, could be used to make a destructive or incendiary device or substance, and that he intended to make a destructive or incendiary device or substance. Mass. Gen. Laws Ann. ch. 266, § 102(a).

2. Explosives ⇐4, 5

Evidence was insufficient to show that defendant lacked lawful authority to possess or control aluminum powder and red iron oxide, either individually or combined as thermite, as necessary to support convictions for possession of ingredients to make incendiary device or substance with intent to do so; thermite, operating through heat and not explosion, was inflammable or incendiary substance, rather than an explosive substance, regulations introduced at trial requiring permits and licensing were applicable to explosives, and while defendant admitted that he had not obtain permit for possession of thermite or its component parts, Commonwealth produced no evidence showing that regulations applied to thermite, and even assuming that thermite could be considered as inflammable solid subject to regulation,